## **EAST Search History**

## EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1	("20060207876").PN.	US-PGPUB; USPAT	OR	OFF	2007/10/17 09:11
S2	2	("20020153130"   "5342496"). PN	US-PGPUB; USPAT	ADJ	ON	2007/10/17 09:56
S3	3	sputter\$4 target same friction stir welding	US-PGPUB; USPAT	ADJ	ON	2007/10/17 10:00
S4	154	sputter\$4 target same weld\$4	US-PGPUB; USPAT	ADJ	ON	2007/10/17 10:13
S5	41	sputter\$4 target same weld\$4 and friction	US-PGPUB; USPAT	ADJ	ON	2007/10/17 10:14
S6	10	sputter\$4 target same weld\$4 and (friction and weld)	US-PGPUB; USPAT	ADJ	ON	2007/10/17 10:17
S7	1	sputter\$4 target same weld\$4 and (friction and weld and stir)	US-PGPUB; USPAT	ADJ	ON	2007/10/17 10:17
S8	7	sputter\$4 target and (friction and weld and stir)	US-PGPUB; USPAT	ADJ	ON	2007/10/17 10:17
S9	4	(sputter\$4 with target) same (butt and (join\$4 or weld\$4))	US-PGPUB; USPAT	ADJ	ON	2007/12/18 13:27
S10	31	(sputter\$4 with target) and (butt same (join\$4 or weld\$4))	US-PGPUB; USPAT	ADJ	ON	2007/12/18 13:29
S11	11369	(metal) and (butt same (join\$4 or weld\$4))	US-PGPUB; USPAT	ADJ	ON	2007/12/18 14:00
S12	2839	(metal with sheet) and (butt same (join\$4 or weld\$4))	US-PGPUB; USPAT	ADJ	ON	2007/12/18 14:00
S13	97	(metal with sheet) and (butt same (join\$4 or weld\$4)) and ((particle or grain) with diameter)	US-PGPUB; USPAT	ADJ	ON	2007/12/18 14:02
S14	1	("20070102822").PN.	US-PGPUB; USPAT	OR	OFF	2007/12/18 15:36
S15	2	("5813592"   "5460317"). PN:	US-PGPUB; USPAT	ADJ	ON	2007/12/18 16:08
S16	179	("3949896"   "4144110"). PN. OR ("5460317"). URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/12/18 16:10

S17	87	S16 and butt	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/12/18 16:11
S18	1	S16 and butt and sputter \$4	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/12/18 16:12
S19	71	S16 and butt and diameter	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/12/18 16:15
S20	277	(friction with stir with weld\$4) and butt and metal	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/12/18 16:21
S21	1	(friction with stir with weld\$4) and butt and metal and (particle (diameter or radius))	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/12/18 16:42
S22	222	(friction with stir with weld\$4) and butt and metal and (diameter or radius)	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/12/18 16:42
S23	3	(friction with stir with weld\$4) and butt and metal and (diameter or radius) and sputter\$5	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/12/18 16:43
S24	14	(friction with stir with weld\$4) and butt and metal and ((particle or grain) same (diameter or radius))	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/12/18 17:06
S25	5638	(sputter\$4 with target) and ((particle with diameter) or (grain with size))	US-PGPUB; USPAT	ADJ	ON	2007/12/19 15:17
S26	1069	(sputter\$4 with target) same ((particle with diameter) or (grain with size))	US-PGPUB; USPAT	ADJ	ON	2007/12/19 15:18
S27	894	(sputter\$4 with target) same ((particle with diameter) or (grain size))	US-PGPUB; USPAT	ADJ	ON	2007/12/19 15:18
S28	1	(sputter\$4 with target) same ((particle with diameter) or (grain with size)) and (butt or friction stir welding)	US-PGPUB; USPAT	ADJ	ON	2007/12/19 15:18
S29	76	(sputter\$4 with target) same ((particle with diameter) or (grain with size)) and weld\$4	US-PGPUB; USPAT	ADJ	ON	2007/12/19 15:19
S31	6	"888383".ap.	US-PGPUB; USPAT	ADJ	ON	2007/12/20 09:09

S32	26	("4390954"   "4719645"   "5149933"   "5234150"	US-PGPUB; USPAT	ADJ	ON	2007/12/20 09:10
		"5322463"   "5342496"   "5958157"   "6074512"		1		
		"6199259"   "6232774"				
		"6250933"   "6255727"				
		"6401542"   "6423575"				
		"6436802"   "6545247"				
		"6556606"   "6576863"				
	ĺ	"6589408"   "6698907"				
		"6750947"   "6776879"			*	Ì
		"6784563"   "6812471"				
		"6849139"   "6849821").				
		PN.			***	
S33	1	production Ru target	JPO	ADJ	ON	2007/12/31
		sputtering				11:23
S34	718	204/298.13	US-PGPUB;	ADJ	ON	2007/12/31
			USPAT			15:38
S35	679	204/298.13 and sputter	US-PGPUB;	ADJ	ON	2007/12/31
		\$4	USPAT			15:39
S36	91	204/298.13 and sputter	US-PGPUB;	ADJ	ON	2007/12/31
		\$4 and weld\$5	USPAT			15:39
S37	15	228/112.1 and sputter\$4	US-PGPUB;	ADJ	ON	2007/12/31
		and weld\$5	USPAT			15:40
S38	847	228/112.1	US-PGPUB:	ADJ	ON	2007/12/31
			USPAT			15:41
S39	45	sputter\$4 target same	US-PGPUB:	ADJ	ON	2008/06/06
		weld\$4 and friction	USPAT			10:00
S40	12	sputter\$4 target same	US-PGPUB;	ADJ	ON	2008/06/06
		weld\$4 and (friction and	USPAT			10:00
		weld)				
S41	109	(metal with sheet) and	US-PGPUB;	ADJ	ON	2008/06/06
		(butt same (join\$4 or	USPAT			10:00
		weld\$4)) and ((particle or				
		grain) with diameter)				
S42	183	("3949896"   "4144110").	US-PGPUB;	ADJ	ON	2008/06/06
		PN. OR ("5460317").	USPAT; USOCR			10:00
	l	URPN.			***	
S43	71	S42 and butt and	US-PGPUB;	ADJ	ON	2008/06/06
		diameter	USPAT; USOCR		***	10:00
S44	91	204/298.13 and sputter	US-PGPUB;	ADJ	ON	2008/06/06
		\$4 and weld\$5	USPAT		***	10:00
S45	16	228/112.1 and sputter\$4	US-PGPUB;	ADJ	ON	2008/06/06
		and weld\$5	USPAT			10:00
S46	4	sputtering target same	US-PGPUB;	ADJ	ON	2008/06/06
		join\$4 same anneal\$3	USPAT, USOCR,			15:21
			EPO; JPO			
S47	6	sputtering target same	US-PGPUB.	ADJ	ON	2008/06/06
	-	weld\$4 same anneal\$3	USPAT; USOCR;			15:23
	1	1	EPO; JPO	1		1

S48	6	sputter\$4 target same weld\$4 same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/06/06 15:24
S49	9185	weld\$4 same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/06/06 15:24
S50	4470	weld\$4 with anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/06/06 15:24
S51	1871	weld\$4 with anneal\$3 same metal	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/06/06 15:24
S52	623	weld\$4 with anneal\$3 same metal same join\$4	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/06/06 15:24
S54	19	weld\$4 with anneal\$3 same metal same join\$4 same crystal\$5	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/06/06 15:25
<b>S</b> 55	78	post with weld with annealing	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/06/06 15:53
<b>S</b> 56	70	post with weld with annealing and metal	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/06/06 15:56
S57	41	(friction stir welding or fsw) same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/10/08 14:54
S58	43	(friction stir weld\$3 or fsw) same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/10/08 15:06
<b>S</b> 59	145	(friction stir weld\$3 or fsw) and anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/10/08 15:10
S60	7	(friction stir or fsw) and anneal\$3 and plastic with flow	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/10/08 15:13
S61	53	(friction stir or fsw) same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/10/08 15:45
S62	11	(friction stir or fsw) same post with weld and anneal \$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/10/08 15:53
S63	4	"1634670"	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/10/08 16:14
S64	0	sakaran.in.	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/10/08 16:14

S65	347	sankaran.in.	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/10/08 16:14
S66	11	sankaran.in. and anneal \$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2008/10/08 16:15
S67	49	sputter\$4 target same weld\$4 and friction	US-PGPUB; USPAT	ADJ	ON	2009/04/13 15:47
S68	15	sputter\$4 target same weld\$4 and (friction and weld)	US-PGPUB; USPAT	ADJ	ON	2009/04/13 15:47
S69	132	(metal with sheet) and (butt same (join\$4 or weld\$4)) and ((particle or grain) with diameter)	US-PGPUB; USPAT	ADJ	ON	2009/04/13 15:48
S70	200	("3949896"   "4144110"). PN. OR ("5460317"). URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2009/04/13 15:49
S71	81	S70 and butt and diameter	US-PGPUB; USPAT; USOCR	ADJ	ON	2009/04/13 15:49
S72	97	204/298.13 and sputter \$4 and weld\$5	US-PGPUB; USPAT	ADJ	ON	2009/04/13 15:49
S73	20	228/112.1 and sputter\$4 and weld\$5	US-PGPUB; USPAT	ADJ	ON	2009/04/13 15:49
S74	5	sputtering target same join\$4 same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:49
<b>S</b> 75	7	sputtering target same weld\$4 same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:49
S76	8	sputter\$4 target same weld\$4 same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:49
S77	9483	weld\$4 same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:49
S78	4637	weld\$4 with anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:49
<b>S</b> 79	1911	weld\$4 with anneal\$3 same metal	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:49
S80	639	weld\$4 with anneal\$3 same metal same join\$4	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:50
S81	19	weld\$4 with anneal\$3 same metal same join\$4 same crystal\$5	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:50

S82	83	post with weld with annealing	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:50
S83	74	post with weld with annealing and metal	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:50
S84	47	(friction stir welding or fsw) same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:50
S85	49	(friction stir weld\$3 or fsw) same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:50
S86	158	(friction stir weld\$3 or fsw) and anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:50
S87	7	(friction stir or fsw) and anneal\$3 and plastic with flow	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:50
S88	59	(friction stir or fsw) same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:50
S89	11	(friction stir or fsw) same post with weld and anneal \$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/04/13 15:50
S90	50	sputter\$4 target same weld\$4 and friction	US-PGPUB; USPAT	ADJ	ON	2009/09/16 14:34
S91	105	204/298.13 and sputter \$4 and weld\$5	US-PGPUB; USPAT	ADJ	ON	2009/09/16 14:34
S92	20	228/112.1 and sputter\$4 and weld\$5	US-PGPUB; USPAT	ADJ	ON	2009/09/16 14:34
S93	165	(friction stir weld\$3 or fsw) and anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/09/16 14:35
S94	23	(friction stir weld\$3 or fsw) and anneal\$3 and spray	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/09/16 14:35
S95	47	(friction stir welding or fsw) same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/09/16 14:36
S96	49	(friction stir weld\$3 or fsw) same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/09/16 14:37
S97	1904	204/298.13.ccls. or 228/112.1.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2009/09/16 14:37
S98	548	\$97 and (friction stir weld \$5 or fsw)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2009/09/16 14:38

S99	19	S98 and spray	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2009/09/16 14:38
S100	3380	(friction stir weld\$5 or fsw)	US-PGPUB; USPAT; USOOR; EPO; JPO; DERWENT	ADJ	ON	2009/09/16 14:42
S101	115	S100 and spray	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2009/09/16 14:42
S102	14	S101 and sputter\$4	US-PGPUB; USPAT; USOOR; EPO; JPO; DERWENT	ADJ	ON	2009/09/16 14:42
S103	165	(friction stir weld\$3 or fsw) and anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/09/16 14:44
S104	441	S100 and butt	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/09/16 14:45
S105	382	S104 and (aluminum or al or copper or cu or silver or ag)	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/09/16 14:45
S106	41	S105 and anneal\$4	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/09/16 14:45
S107	38	S105 and recrystallization	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/09/16 14:48
S108	21	S105 and recrystallized	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/09/16 14:48
S109	59	S100 and sputter\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2009/09/16 14:48
S110	13	S109 and butt	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2009/09/16 14:48
S111	52	sputter\$4 target same weld\$4 and friction	US-PGPUB; USPAT	ADJ	ON	2010/03/04 11:48
S112	108	204/298.13 and sputter \$4 and weld\$5	US-PGPUB; USPAT	ADJ	ON	2010/03/04 11:48
S113	23	228/112.1 and sputter\$4 and weld\$5	US-PGPUB; USPAT	ADJ	ON	2010/03/04

S114	177	(friction stir weld\$3 or fsw) and anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2010/03/04 11:49
S115	25	(friction stir weld\$3 or fsw) and anneal\$3 and spray	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2010/03/04 11:49
S116	50	(friction stir welding or fsw) same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2010/03/04 11:49
S117	52	(friction stir weld\$3 or fsw) same anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2010/03/04 11:49
S118	2008	204/298.13.ccls. or 228/112.1.ccls.	US-PGPUB; USPAT; USOOR; EPO; JPO; DERWENT	ADJ	ON	2010/03/04 11:49
S119	583	S118 and (friction stir weld\$5 or fsw)	US-PGPUB; USPAT; USOOR; EPO; JPO; DERWENT	ADJ	ON	2010/03/04 11:49
S120	22	S119 and spray	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2010/03/04 11:49
S121	3631	(friction stir weld\$5 or fsw)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2010/03/04 11:50
S122	129	S121 and spray	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2010/03/04 11:50
S123	14	S122 and sputter\$4	US-PGPUB; USPAT; USOOR; EPO; JPO; DERWENT	ADJ	ON	2010/03/04 11:50
S124	177	(friction stir weld\$3 or fsw) and anneal\$3	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2010/03/04 11:51
S125	469	S121 and butt	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2010/03/04 11:51
S126	404	S125 and (aluminum or al or copper or cu or silver or ag)	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2010/03/04 11:51
S127	45	S126 and anneal\$4	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2010/03/04 11:51

S128	41	S126 and recrystallization	US-PGPUB; USPAT; USOOR; EPO; JPO	ADJ	ON	2010/03/04 11:51
S129	21	S126 and recrystallized	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2010/03/04 11:51
S130	63	S121 and sputter\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2010/03/04 11:51
S131	15	S130 and butt	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2010/03/04 11:51

## EAST Search History (Interference)

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## 3/4/2010 12:20:51 PM

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